APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/636,004	08/09/2000	David del Val	MS1-542US	5417

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EXAMINER
NGUYEN, QUANG N

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 October 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>7-9,19-24,27-29,55 and 57-62</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>7-9,19-24,27-29, 55 and 57-62</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09 August 2000</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Detailed Action

1.   This Office Action is in response to the Amendment filed on 10/26/2005. Claims

7 and 19 have been amended. Claims 1-6, 10-18, 25-26, 30-54 and 56 have been

cancelled. Claims 57-62 have been added as new claims. Claims 7-9, 19-24, 27-29,

55 and 57-62 are presented for examination.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   **Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

Bharali et al. (US 6,216,163), hereinafter referred as Bharali, in view of Payne et al.

(US 6,161,201), hereinafter referred as Payne.

4.   As to claim 7, Bharali teaches a method for measuring bandwidth between two

entities on a dynamic network, comprising:

via a communications network, receiving at least a pair of non-compressible

packets having measurable characteristics *(via the Internet 131 of Fig. 1, receiving back*

to back transmission of small packets of 100 bytes and large packets of 700 bytes,

whose types are chosen to be non-compressible) (Bharali, col. 8, lines 8-14);

calculating bandwidth based upon, measurable characteristics of at least the pair

of non-compressible packets *(calculating the transmission rate for the small packet 10*

bytes per second and large packet 35 bytes per second, with the data transmission rate

maximum of 60 bytes per second) (Bharali, col. 8, lines 25-33 and lines 42-47).

However, Bharali does not explicitly teach determining if the calculated

bandwidth is outside a given range of believability for calculated bandwidth, then

disregarding the calculated bandwidth; and querying a modem of an entity about a

bandwidth setting of the modem.

In a related art, Payne teaches a method and system for concurrent interaction

with a modem having an open connection wherein a host system 34 coupled via

modem 36 to a landline communication channel, may experience performance less than

desirable *(i.e., may experience the performance or bandwidth less a minimum threshold*

value such as less than 10 bytes per second) then the connection monitor 40 may

consult with modem 36, by querying the modem 36, to deduce or establish a reduced

data transfer rate as negotiated by the remote modem *(i.e., determine that the*

calculated bandwidth is outside a given range of believability, then disregarding the

calculated bandwidth; and querying a modem of an entity about a bandwidth setting of

the modem) (Payne, Fig. 2 and col. 8, lines 13-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Bharali and Payne to include querying a modem of an entity about a bandwidth setting of the modem if experiencing the performance less than desirable *(i.e., if the calculated or performance bandwidth is outside a given range of believability)* since such methods were conventionally employed in the art to allow a user to react accordingly by adjusting bandwidth settings when determining the change in bandwidth/data transfer rate *(i.e., performance less than desirable)* to enable a user to diagnose and solve throughput problems such diminished bandwidth capabilities or high error rates inherent to wireless communication channels (Payne, col. 8, lines 8-12).

5.   As to claims 8-9, Bharali-Payne teaches the method of claim 7, wherein the queried modem is a modem of a receiving entity *(modem 36 of Fig. 2)* or a modem of a sending entity *(the connection monitor 40 may request a status information from a remote modem, i.e., may query a modem of sending entity)* (Payne, col. 5, lines 40-50).

6.   **Claims 19, 21-24, 27-29, 55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bharali, in view of Linzer et al. (US 6,005,621), herein after referred as Linzer.**

7.   As to claim 19, Bharali teaches a method for measuring bandwidth between two entities on a dynamic network, comprising:

via a dynamic network *(via the Internet 131 of Fig. 1)*, sending at least a pair of non-compressible packets *(sending back to back transmission of packets whose types are chosen to be non-compressible)*, the dynamic network being a communications network having no assurance that both packets of a pair of identical packets are handled in an identical manner while in transit on the communications network (Bharali, col. 8, lines 8-14);

receiving a bandwidth value determined based upon measurable characteristics of at least the pair of non-compressible packets *(receiving the calculated transmission rate for the small packet 10 bytes per second and large packet 35 bytes per second, with the data transmission rate maximum of 60 bytes per second)*, and consideration of a given range of believability related to calculated bandwidth *(here, the calculated transmission rate 10 bytes per second and 35 bytes per second could be used to implement a given range of believability related to the calculated bandwidth)* (Bharali, col. 8, lines 25-33 and lines 42-47).

However, Bharali does not explicitly teach selecting and sending a file formatted for the given calculated bandwidth that is equal to or less than the bandwidth value.

In a related art, Linzer teaches a video server generating and delivering high-resolution video over high bandwidth connections and low-resolution video over low bandwidth connections *(i.e., selecting and sending a file formatted for the given calculated bandwidth, i.e., for the available bandwidth)* (Linzer, col. 7, lines 48-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include choosing appropriately formatted files for a given

bandwidth as taught by Linzer in the Bharali invention because it would allow the system to deliver the appropriate version of a file formatted for the corresponding provided bandwidth in providing high quality of service (QoS) to users based on their bandwidth connections (Linzer, col. 3, lines 1-15).

8.   As to claim 21, Bharali-Linzer teaches the method of claim 19, wherein the packets are non-compressible packets. Examiner would like to note that entropy, in the information theory field, is defined as the randomness of data in a set, wherein the more random the data is the higher the entropy. Since data compression depends on patterns in data, higher randomness of data correlates to lower compression ratios. Therefore, it is inherent that non-compressible packets have a highly entropic.

9.   As to claims 22-23, Bharali-Linzer teaches the method of claim 19, wherein each of the pair of non-compressible packet is formatted for TCP/UDP *(packets are transmitted during the TCP slow start phase and the TCP congestion Avoidance Condition represent conditions under which servers transmits packets back-to-back)* (Bharali, col. 9, line 65 – col. 10, line 2).

10.   As to claim 24, Bharali-Linzer teaches the method of claim 19, wherein the packets of the pair are equivalent in size *(both packets of 1500 bytes)* (Bharali, col. 10, lines 23-26).

11.   As to claim 27, Bharali-Linzer teaches the method of claim 19, further comprising selecting one of the pair of non-compressible packets from a set of different non-compressible packets *(among messages of 100 bytes, 700 bytes, or 1500 bytes).*

12.   As to claim 28, Bharali-Linzer teaches the method of claim 19, before sending, further comprising generating the pair of non-compressible packets *(inherently, the packets are generated before sent).*

13.   Claim 29 is a corresponding computer-readable medium claim of method claim 19; therefore, it is rejected under the same rationale.

14.   As to claim 55, Bharali-Linzer teaches the method of claim 19, wherein the dynamic network is the Internet (Bharali, the Internet 131 of Fig. 1).

15.   As to claim 57, Bharali-Linzer teaches the method of claim 19, wherein the bandwidth value received is within the given range of believability related to the calculated bandwidth *(the transmission rate, i.e., the bandwidth, of the small packets of 100 bytes is 10 bytes per second and the transmission rate of the large packets of 700 bytes is 35 bytes per second is within the given/predetermined range of 10-35 bytes per second and/or less than the maximum data transmission rate of 60 bytes per second).*

16.   Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bharali-Linzer, and further in view of Takagi et al. (US 6,272,148), herein after referred as Takagi.

17.   As to claim 20, Bharali-Linzer teaches the method of claim 19, but does not explicitly teach each of the pair of non-compressible packets is approximately fragmentation-avoidance size.

In a related art, Takagi teaches a network system that utilizes packets that are the maximum size, wherein they can be transferred without fragmentation (Takagi, col. 3, lines 9-18).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the packets the largest size possible while avoiding fragmentation as taught by Takagi in the Bharali's invention because it would avoid spending wasteful processing time and improve throughput, i.e., giving a better estimate of the actual bandwidth between two entities (Takagi, col. 3, lines 18-23).

18.   Claims 58-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bharali-Payne, and further in view of Wang (US 6,118,817).

19.   As to claims 58 and 63, Bharali-Payne teaches the method as in claim 7 above, but does not explicitly teach that if the calculated bandwidth is determined to be outside the given range of believability, then setting a bandwidth to a low-believability threshold

if the calculated bandwidth is below the given range of believability for calculated bandwidth; and setting a bandwidth to a high-believability threshold if the calculated bandwidth is above the given range of believability for calculated bandwidth.

In a related art, Wang teaches a video signal encoder 100 includes a frame rate controller 120 which <u>adjusts the frame rate of the encoded video signal as necessary to preserve the motion video signal quality and to prevent loss of frames due to exceeded bandwidth limitations</u>, wherein if the frame rate controller 120 determines that the cumulative bandwidth balance indicates a bandwidth deficit which is <u>greater than the maximum threshold</u>, the frame rate controller 120 <u>reduces the frame rate</u> *(i.e., setting a bandwidth to a high-believability threshold if the calculated bandwidth is above the given range of believability for calculated bandwidth)* and conversely, if a bandwidth deficit is <u>less than the minimum threshold</u>, the frame rate controller 120 <u>increases the frame rate</u> *(i.e., setting a bandwidth to a low-believability threshold if the calculated bandwidth is below the given range of believability for calculated bandwidth)* (Wang, col. 15, lines 10-60).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Bharali-Payne and Wang to adjust the bandwidth when the calculated bandwidth is determined to be outside the given range of believability since such methods were conventionally employed in the art to allow the system to <u>adjusts the frame rate of the encoded video signal as necessary to preserve the motion video signal quality and to prevent loss of frames due to exceeded bandwidth limitations</u> (Wang, col. 15, lines 13-17).

20.   Claims 59-62 contain similar limitations of claims 21-24; therefore, they are

rejected under the same rationale.

21.   As to claim 63, Bharali-Payne-Wang teaches the method of claim 58, wherein the

given range of believability for calculated bandwidth is 24.4 Kbps − 1 Mbps, the low

believability threshold is 24.4 Kbps and the high believability threshold is 1 Mbps *(since*

the maximum threshold is a given or predetermined threshold, so it could be set at 1

Mbps and the minimum threshold is a given or predetermined threshold, so it could be

set at 24 Kbps).

22.   Applicant's arguments as well as request for reconsideration filed on 10/26/2005

have been fully considered but they are moot in view of the new ground(s) of rejection.

23.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action.   Accordingly, **THIS ACTION IS MADE FINAL.**   See MPEP

§ 706.07(a).   Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action.   In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action.   In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

24.   Further references of interest are cited on Form PTO-892, which is an

attachment to this office action.

25.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Nguyen whose telephone number is (571) 272-3886.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER